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(71)Applicant : OLYMPUS OPTICAL CO LTD

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(72)Inventor : SUZUKI TAKAYUKI

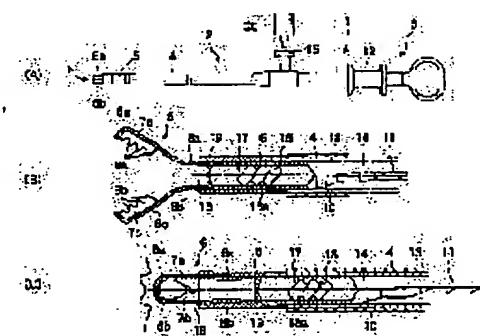
OKADA TSUTOMU  
 YAMAMOTO TETSUYA  
 KAWASHIMA KOICHI  
 ISHIKAWA MASAHIRO  
 KIMURA KO

## (54) ENDOSCOPE TREATMENT INSTRUMENT

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To widely spray a pigment on the mucous membrane of an organism tissue with a simple operation by spraying the liquid flowing out from a water feed path outlet with a spraying means in a wide range without using a large volume of pigment.

**SOLUTION:** A slider 12 of an operation section 3 of an endoscope treatment instrument 1 is moved to this side, an arm sections 8a, 8b of a tip treatment section 6 are drawn into a tip hard section 5, and an insertion section 2 is inserted into a body cavity via the forceps channel of an endoscope. The slider 12 is moved to open a pair of forceps elements 6a, 6b. An injection tube 20 containing a pigment solution is fitted to a water feed cock 15, and the injection tube 20 is operated. The pigment solution enters the water feed path 14 of a sheath section 4, it is applied with rotating motion by a rotating member 18, it is made foggy by a throttle member 19, it flows out from the opening section 16 of the water feed path 14, and it is foggily sprayed on a mucous membrane in a wide range. The existence of a lesion section in a body and the boundary between the lesion section and a normal section can be clearly distinguished.



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**CLAIMS**

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[Claim(s)]

[Claim 1] The sheath section by which it was formed of a long and slender shell which can be inserted in a forceps channel of an endoscope, and an aqueduct was formed in a pipe A control unit connected with a hand side of this sheath section The head treatment section which was arranged at a head of said sheath section and was equipped with a forceps element of a couple which can be opened and closed freely An actuation means of said forceps element by which a point was connected with said forceps element, and the end face section extended to a hand side of said sheath section, and was connected with said control unit an object for water supply which fixed to said control unit and was opened for free passage by the end face section of an aqueduct of said sheath circles -- a mouthpiece It is the treatment implement for endoscopes equipped with the above, and is characterized by establishing a spraying means to continue and sprinkle a liquid which flows out of an outlet of said aqueduct outside in a large range.

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**DETAILED DESCRIPTION**

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the treatment implement for endoscopes which passes, excises the body tissue of a patient's inside of the body endoscopically, and extracts the preparation.

[0002]

[Description of the Prior Art] although inserting a bioptome in the channel of an endoscope and extracting a part of lesion section is performed after inserting an endoscope in a patient's inside of the body beforehand and observing the lesion section with this endoscope from the former, in extracting body tissues, such as the lesion section of a patient's inside of the body, the case where distinction with the lesion part of a body tissue and a normal part is hard to be attached is alike occasionally, and has been carried out.

[0003] In such a case, before inserting a bioptome, a coloring matter conveyance tube is inserted in the forceps channel of an endoscope, and he sprinkles the coloring matter sent from this coloring matter conveyance tube inside of the body, and is trying to color it the membrane of a body tissue. Thereby, the boundary of a lesion part and a normal part becomes clear. It is in this condition, next a coloring matter conveyance tube is sampled from a forceps channel, it changes to a bioptome, and the lesion section is extracted with this bioptome.

[0004] Moreover, liquid passage is formed in the interior of a bioptome at JP,4-146741,A, coloring matter is supplied to the inside of the body through the liquid passage inside this bioptome, and the structure of the bioptome it enabled it to color the membrane of a body tissue is indicated.

[0005]

[Problem(s) to be Solved by the Invention] However, after inserting the coloring matter conveyance tube in the forceps channel of an endoscope and completing the coloring to the membrane of a body tissue, when it is made the configuration which samples a coloring matter conveyance tube from a forceps channel, changes to a bioptome, and extracts the lesion section with this bioptome, insert-and-remove actuation of a coloring matter spraying tube and a bioptome is complicated, and there is a time-consuming problem.

[0006] Moreover, since coloring matter is linearly emitted from the outlet section of the liquid passage inside a bioptome with the structure currently indicated by JP,4-146741,A at the time of the coloring to the membrane of a body tissue, it is difficult to color the large area of membrane at once. Therefore, since actuation of shaking an endoscope or forceps vertically and horizontally is needed in order to make coloring matter color it the large area of membrane, the actuation becomes complicated. Furthermore, when neck swing actuation of such an endoscope or forceps is performed, there is also a problem that the amount of the coloring matter used increases.

[0007] This invention was made paying attention to the above-mentioned situation, and the object can sprinkle coloring matter to the large area of the membrane of a body tissue by easy actuation, and is to offer the treatment implement for endoscopes which a possibility that the amount of the coloring matter used may increase according to a rank does not have, either.

[0008]

[Means for Solving the Problem] The sheath section by which this invention was formed of a long and slender shell which can be inserted in a forceps channel of an endoscope, and an aqueduct was

formed in a pipe, A control unit connected with a hand side of this sheath section, and the head treatment section which was arranged at a head of said sheath section and was equipped with a forceps element of a couple which can be opened and closed freely, An actuation means of said forceps element by which a point was connected with said forceps element, and the end face section extended to a hand side of said sheath section, and was connected with said control unit, an object for water supply which fixed to said control unit and was opened for free passage by the end face section of an aqueduct of said sheath circles -- in a treatment implement for endoscopes possessing a mouthpiece, it is the treatment implement for endoscopes characterized by establishing a spraying means to continue and sprinkle a liquid which flows out of an outlet of said aqueduct outside in a large range. and -- the time of coloring to membrane of a body tissue -- a treatment implement for endoscopes -- a forceps channel of an endoscope -- inserting -- an object for water supply -- anchoring and coloring matter liquid are poured into a mouthpiece for a glass syringe. At this time, the inside of an aqueduct of sheath circles is flowed, and coloring matter liquid which flows out of an outlet of an aqueduct outside covers a large range with a spraying means, and is sprinkled. Therefore, it is made for a boundary of existence of breadth and a lesion part, and the lesion part and a normal part to become clear at a large area of membrane of a body tissue.

[0009]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the 1st of this invention is explained with reference to drawing 1 (A) - (C). Drawing 1 (A) shows the outline configuration of the treatment implement 1 whole for endoscopes of the gestalt of this operation. The long and slender insertion section 2 which can be inserted in the forceps channel of the endoscope which is not illustrated, and the control unit 3 by the side of the hand connected with the end face section of this insertion section 2 are formed in the treatment implement 1 for endoscopes of the gestalt of this operation.

[0010] Moreover, the shell 4 with flexibility, for example, the sheath section formed with the close-winding coil, is formed in the insertion section 2. The head hard cylindrical shape-like section 5 has fixed at the head of this sheath section 4.

[0011] Furthermore, the head treatment section 6 is arranged by the point of the sheath section 4. The forceps elements 6a and 6b of the couple which can be opened and closed freely are formed in this head treatment section 6. Each forceps elements 6a and 6b are arranged at a head side, as shown in drawing 1 (B), are arranged at a cup [ which extract a body tissue ] 7a [ 7 ] and 7b, and hand side, and consist of the arm sections 8a and 8b which have spring nature. And each forceps elements 6a and 6b are formed possible [ \*\*\*\* ] to the sheath section 4.

[0012] Furthermore, the forceps elements 6a and 6b and the head hard section 5 are formed with synthetic-resin materials, such as metallic materials, such as stainless steel, titanium, brass, and a nickel titanium alloy, and acrylonitrile styrene butadiene rubber, a polycarbonate. Here, the arm sections 8a and 8b of each forceps elements 6a and 6b are formed of the flat spring energized in the direction developed in the direction of outside (the open direction) which leaves mutually between both cup 7a and 7b.

[0013] Moreover, two or more V character-like projections 9a and 9b are formed in Cups 7a and 7b at the point and the lateral portion. And at the time of lock out of both the cups 7a and 7b (at the time of contact), the mountain and valley of the mutual V character-like projections 9a and 9b gear.

[0014] Furthermore, the point of the inlet connection material 10 has fixed in the end face section of the arm sections 8a and 8b of the forceps elements 6a and 6b. In the hand side edge section of this inlet connection material 10, the point of the actuation wire 11 inserted in the interior of the sheath section 4 has fixed. The end face section of this actuation wire 11 has extended to the control unit 3 side through the interior of the sheath section 4.

[0015] Moreover, the slider (actuation means) 12 is formed in the control unit 3 free [ sliding ] in accordance with shaft orientations. To this slider 12, the end face section of the actuation wire 11 has fixed. And in accordance with the shaft orientations of the sheath section 4, push length actuation of the actuation wire 11 is carried out with slide actuation of this slider 12, and \*\*\* actuation of the forceps elements 6a and 6b is carried out to the sheath section 4 with actuation of this actuation wire 11.

[0016] Here, extrusion actuation of the forceps elements 6a and 6b is carried out ahead [ of the

sheath section 4] with extrusion actuation of the actuation wire 11. And as shown in drawing 1 (B), after the arm sections 8a and 8b have projected ahead from the head hard section 5, between both cup 7a and 7b opens.

[0017] Moreover, if the arm sections 8a and 8b are thoroughly drawn in the head hard section 5 as shown in drawing 1 (C) with drawing-in actuation of the actuation wire 11, Cups 7a and 7b will be closed and will contact mutually. At this time, sufficient cutting force to bite off a body tissue is impressed between both cup 7a and 7b.

[0018] Furthermore, it is covered with the covering material 13 formed with synthetic-resin materials, such as polytetrafluoroethylene, a polyamide, polyethylene, and polytetrafluoroethylene perfluoro alkoxy ethylene, by the peripheral face of the sheath section 4 watertight over the overall length. And the aqueduct 14 is formed in the interior of this sheath section 4.

[0019] Moreover, the water supply cock (for water supply mouthpiece) 15 opened for free passage by the aqueduct 14 of the sheath section 4 is formed in the control unit 3. Furthermore, the point of the aqueduct 14 in the pipe of this sheath section 4 is opened for free passage by the opening (outlet) 16 at the head of the head hard section 5. And water is supplied to the liquid supplied by the water supply cock 15 by the side of a control unit 3 to the opening 16 at the head of the head hard section 5 through the aqueduct 14 in the pipe of the sheath section 4.

[0020] Moreover, a spraying means 17 to continue and sprinkle the liquid which flows out of the outlet of an aqueduct 14 into an exterior side in a large range is formed in the interior of the inlet connection material 10. The turning member 18 which fixed inside the inlet connection material 10, and the converging section material 19 are formed in this spraying means 17. Here, spiral turning slot 18a is formed in the peripheral face of the turning member 18. Furthermore, the converging section material 19 is arranged rather than the turning member 18 at the outlet side of an aqueduct 14.

[0021] Next, an operation of the above-mentioned configuration is explained. At the time of the activity of the treatment implement 1 for endoscopes of the gestalt of this operation, the slider 12 of a control unit 3 is beforehand moved to a back end (hand) side, and where the arm sections 8a and 8b of the head treatment section 6 are drawn in the head hard section 5, the insertion section 2 is inserted into a coelome through the forceps channel of an endoscope.

[0022] Then, a slider 12 is moved to a head side and the forceps elements 6a and 6b are moved to a head side to the head hard section 5 through the actuation wire 11. thereby, the arm sections 8a and 8b are made to project from the head hard section 5, and as shown in drawing 1 (B), Cups 7a and 7b are developed outside according to the spring force of the arm sections 8a and 8b -- making (open actuation being carried out) -- the opening of the opening 16 is carried out.

[0023] Then, the glass syringe 20 containing coloring matter liquid is attached in the water supply cock 15. In this condition, coloring matter liquid is sent in in the aqueduct 14 of the sheath section 4 by actuation of a glass syringe 20. In case the coloring matter liquid which flows the inside of an aqueduct 14 at this time passes the turning member 18, it can give a circular movement along with turning slot 18a of this turning member 18. And by passing the following converging section material 19, it becomes fog-like, and the liquid which flows out of the opening 16 of the outlet of an aqueduct 14 outside covers a large range, and is sprinkled, and the turning style of this coloring matter liquid is sprinkled by wide range membrane. Thereby, the boundary between existence of the lesion section of a patient's inside of the body and a lesion part, and a normal part becomes clear.

[0024] Then, the cup sections 7a and 7b are pressed in the condition of having made at least the doner site of the body tissue in a coelome contacting. Furthermore, a slider 12 is lengthened to a hand side in this condition, the forceps elements 6a and 6b are moved to a hand side to the head hard section 5 through the actuation wire 11, and the arm sections 8a and 8b are contained in the head hard section 5. At this time, with the actuation the arm sections 8a and 8b are contained by whose head hard section 5, Cups 7a and 7b move in the closed direction, and approach mutually. And as shown in drawing 1 (C), as for Cups 7a and 7b, the arm sections 8a and 8b contact mutually, after having been thoroughly contained by the head hard section 5, and excision of a body tissue is performed.

[0025] Moreover, the insertion section 2 is pulled out from the forceps channel of an endoscope after termination of excision actuation of a body tissue, a slider 12 is operated, Cups 7a and 7b are

developed, and the explants of the excised body tissue are collected.

[0026] Then, the following effect is done so if it is in the thing of the above-mentioned configuration. With the gestalt of this operation, inside the inlet connection material 10, namely, the turning member 18, In case the coloring matter liquid which forms the converging section material 19 and flows the inside of an aqueduct 14 passes the turning member 18 Along with turning slot 18a of this turning member 18, give a circular movement, and it becomes fog-like when the turning style of this coloring matter liquid passes the following converging section material 19. Since the liquid which flows out of the opening 16 of the outlet of an aqueduct 14 outside covers a large range, is sprinkled and was sprinkled by wide range membrane, coloring matter liquid can be sprinkled to the large area of membrane in the living body only by simple liquid-sending actuation of a glass syringe 20 with this spraying means 17. Therefore, in order to sprinkle coloring matter liquid broadly, it is unnecessary and complicated actuation of shaking forceps vertically and horizontally like before can do easily the activity which sprinkles coloring matter liquid broadly. Furthermore, the amount of the coloring matter used can be lessened compared with the former.

[0027] Moreover, drawing 2 - drawing 4 show the gestalt of operation of the 2nd of this invention. In addition, the same sign is given to the portion same in drawing 2 - drawing 4 as the gestalt (refer to drawing 1 (A) - (C)) of the 1st operation, and the explanation is omitted.

[0028] That is, although the gestalt of the 1st operation showed the configuration which covered with covering material 13 watertight to the peripheral face of the sheath section 4, and formed the aqueduct 14 in the interior of the sheath section 4, with the gestalt of this operation, the coloring matter spraying tube (water supply tube) 21 is made to insert in the interior of the sheath section 4 free [ the attitude to shaft orientations ], and the turning member 18 and the converging section material 19 of the spraying means 17 are fixed to the point of this spraying tube 21. Here, the converging section material 19 is formed in head opening 21a of the spraying tube 21.

[0029] Moreover, the hand side of the coloring matter spraying tube 21 is pulled out from the control unit 3 (refer to drawing 1 (A)) at the exterior side. Furthermore, the water supply cock 15 (refer to drawing 1 (A)) who can attach the glass syringe 20 (refer to drawing 1 (A)) for coloring matter impregnation in the edge by the side of the hand of this coloring matter spraying tube 21 has fixed.

[0030] Moreover, if the spraying tube 21 is retreated to a hand side, the storage space 22 of a body tissue will be secured in the head hard section 5 at the head of the sheath section 4. In addition, in the gestalt of this operation, the coat by the covering material 13 (refer to drawing 1 (B) and (C)) made from a synthetic-resin material is unnecessary like the gestalt of the 1st operation to the peripheral face of the sheath section 4.

[0031] Next, an operation of the above-mentioned configuration is explained. After inserting the insertion section 2 of the treatment implement 1 for endoscopes into a coelome through the forceps channel of an endoscope like the gestalt of the 1st operation at the time of the activity of the treatment implement 1 for endoscopes of the gestalt of this operation, as migration actuation is carried out at a head side and the slider 12 of a control unit 3 is shown in drawing 3, Cups 7a and 7b are developed (open actuation is carried out).

[0032] Then, the glass syringe 20 containing coloring matter liquid is sent to anchoring, and coloring matter liquid is sent to the water supply cock 15 in the spraying tube 21. In case the coloring matter liquid which flows the inside of the spraying tube 21 at this time passes the turning member 18, it can give a circular movement along with turning slot 18a of this turning member 18. And by passing the following converging section material 19, it becomes fog-like, and the liquid which flows out of head opening 21a of the spraying tube 21 outside through the opening 16 of the head hard section 5 covers a large range, and is sprinkled, and the turning style of this coloring matter liquid is sprinkled by wide range membrane. Thereby, the boundary between existence of the lesion section of a patient's inside of the body and a lesion part, and a normal part becomes clear.

[0033] Then, the spraying tube 21 is moved to a hand side, and storage space 22 is secured in the head hard section 5. Then, the cup sections 7a and 7b are pressed in the condition of having made at least the doner site of the body tissue in a coelome contacting. Furthermore, a slider 12 is lengthened to a hand side in this condition, the forceps elements 6a and 6b are moved to a hand side to the head hard section 5 through the actuation wire 11, and the arm sections 8a and 8b are contained in the head hard section 5. At this time, with the actuation the arm sections 8a and 8b are contained by

whose head hard section 5, Cups 7a and 7b move in the closed direction, and approach mutually. And as shown in drawing 4, as for Cups 7a and 7b, the arm sections 8a and 8b contact mutually, after having been thoroughly contained by the head hard section 5, and excision of a body tissue is performed.

[0034] Moreover, the excision organization H excised between cup 7a and 7b is contained by storage space 22 as shown in drawing 4. Furthermore, after one termination of excision actuation of a body tissue H, open actuation of the cups 7a and 7b is carried out again, and extraction of other body tissues H is repeated similarly. And after two or more excision organizations H are stored in storage space 22 and excision actuation of the target body tissue H is completed, the insertion section 2 is pulled out from the forceps channel of an endoscope. In this condition, a slider 12 is extruded and operated to a head side, Cups 7a and 7b are developed (open actuation), and two or more explants H are collected.

[0035] Then, the following effect is done so if it is in the thing of the above-mentioned configuration. That is, the activity of coloring matter spraying, extraction of two or more body tissues H, etc. is attained, without carrying out extraction of the forceps from the forceps channel of an endoscope like before, since in addition to the effect of the gestalt of the 1st operation the storage space 20 of the excision organization H is secured in the head hard section 5 and the excision organization H can be contained by retreating the spraying tube 21 especially with the gestalt of this operation here.

[0036] Moreover, drawing 5 (A) and (B) show the gestalt of operation of the 3rd of this invention. In addition, the same sign is given to the portion same in drawing 5 (A) and (B) as the gestalt (refer to drawing 1 (A) - (C)) of the 1st operation, and the gestalt (refer to drawing 2 - drawing 4) of the 2nd operation, and the explanation is omitted.

[0037] That is, the gestalt of this operation installs the coloring matter spraying tube 21 in the outside of the head hard section 5 of the sheath section 4 side by side, as shown in drawing 5 (A). As shown in drawing 5 (B), the turning member 18 and the converging section material 19 of the spraying means 17 are prepared in the point of this coloring matter spraying tube 21 like the gestalt of the 2nd operation.

[0038] Then, since the turning member 18 and the converging section material 19 of the spraying means 17 are prepared in the interior of the coloring matter spraying tube 21 like the gestalt of the 2nd operation even if it is in the thing of the above-mentioned configuration At the time of the activity of the treatment implement 1 for endoscopes of the gestalt of this operation, a glass syringe 20 on the water-supply cock 15 in the state of a mounting beam While being able to do easily the activity which can sprinkle coloring matter liquid to the large area of membrane in the living body, and sprinkles coloring matter liquid broadly with the spraying means 17 in the coloring matter spraying tube 21 only by simple liquid-sending actuation of a glass syringe 20 There is an effect which can lessen the amount of the coloring matter used compared with the former.

[0039] Moreover, drawing 6 (A) and (B) show the gestalt of operation of the 4th of this invention. The gestalt of this operation makes the coloring matter supply tube 31 and the air supply tube 32 install in the outside of the head hard section 5 of the sheath section 4 of the gestalt (refer to drawing 5 (A) and (B)) of the 3rd operation side by side.

[0040] Here, the water supply cock 15 (refer to drawing 1 (A)) who can attach a glass syringe 20 (refer to drawing 1 (A)) is attached in the hand side of the coloring matter supply tube 31.

Furthermore, the supplied-air pump which is not illustrated is attached in the hand side of the air supply tube 32.

[0041] Moreover, it turns the opening of the head opening 31a of the coloring matter supply tube 31 upward in the condition of intersecting perpendicularly to the direction of a center line of this tube 31 as shown in drawing 6 (B). Furthermore, the opening of the head opening 32a of the air supply tube 32 is carried out towards the front which is the runoff direction of the liquid from head opening 31a of the coloring matter supply tube 31. And head opening 31a of the coloring matter supply tube 31 and head opening 32a of the air supply tube 32 are in contact with the abbreviation right angle.

[0042] Next, an operation of the above-mentioned configuration is explained. While making the interior of the coloring matter supply tube 31 filled up with coloring matter liquid by actuation of a glass syringe 20 at the time of the activity of the treatment implement 1 for endoscopes of the gestalt

of this operation, air is supplied to the air supply tube 32 with high voltage with a supplied-air pump. In this case, in the contact of head opening 31a of the coloring matter supply tube 31, and head opening 32a of the air supply tube 32, a pressure falls by the air injection from head opening 32a of the air supply tube 32, coloring matter liquid is sucked up from head opening 31a of the coloring matter supply tube 31, and it mixes in air, and is spouted in the shape of a fog.

[0043] Then, if it is in the thing of the above-mentioned configuration, the coloring matter supply tube 31 and the air supply tube 32 are made to install in the outside of the head hard section 5 of the sheath section 4 side by side. Since a pressure falls by the air injection from head opening 32a of the air supply tube 32, coloring matter liquid is sucked up from head opening 31a of the coloring matter supply tube 31, and it mixes in air and was made to be spouted in the shape of a fog. Coloring matter liquid can be sprinkled to the large area of membrane in the living body with the gestalt of this operation as well as the gestalt of the 1st operation, and while being able to do easily the activity which sprinkles coloring matter liquid broadly, there is an effect which can lessen the amount of the coloring matter used compared with the former.

[0044] Moreover, drawing 7 (A) and (B) show the gestalt of operation of the 5th of this invention. In addition, the same sign is given to the portion same in drawing 7 (A) and (B) as the gestalt (refer to drawing 1 (A) - (C)) of the 1st operation, and the explanation is omitted.

[0045] That is, with the gestalt of this operation, the pantographic-linkage device 41 is established as a closing motion drive of the forceps elements 6a and 6b of the gestalt (refer to drawing 1 (A) - (C)) of the 1st operation.

[0046] By this pantographic-linkage device 41, the arm sections 8a and 8b of the cups 7a and 7b of the forceps elements 6a and 6b of the gestalt (refer to drawing 1 (A) - (C)) of the 1st operation are formed with rigid metallic materials, such as stainless steel without spring nature.

[0047] As shown in drawing 7 (B), two link boards 42a and 42b and one actuation piece 43 are connected with the hand side of these arm sections 8a and 8b free [ rotation ] by pins 44, 45a, 45b, and 46. And the pantographic-linkage device 41 is constituted by the arm sections 8a and 8b, two link boards 42a and 42b, and one actuation piece 43.

[0048] Furthermore, the actuation wire 11 has fixed in the end face section of the actuation piece 43. The hand side of this actuation wire 11 has fixed to the slider 12 (refer to drawing 1 (A)) of a control unit 3 (refer to drawing 1 (A)).

[0049] Moreover, the coat tube 47 is formed in the outside of the sheath section 4 free [ an attitude in the direction of an axial center of the sheath section 4 ]. To the hand side of this coat tube 47, the water supply cock 15 (refer to drawing 1 (A)) has fixed.

[0050] Moreover, the turning slot 48 connected spirally is established in the peripheral face of the cups 7a and 7b of both the forceps elements 6a and 6b in the condition that both the cups 7a and 7b are closed as shown in drawing 7 (A). In this case, the turning slot 48 of the peripheral face of Cups 7a and 7b is set as an outer-diameter size which the inner skin of the coat tube 47 and the top-most vertices of Yamabe of the both sides of the turning slot 48 of Cups 7a and 7b touch mostly, when the coat tube 47 advances the outside of Cups 7a and 7b to a wrap location.

[0051] Next, an operation of the above-mentioned configuration is explained. With the gestalt of this operation, in case coloring matter liquid is sent, as beforehand shown in drawing 7 (A), where Cups 7a and 7b are closed, this cup 7a and the whole 7b advance the coat tube 47 in a wrap location.

[0052] In this condition, coloring matter liquid is sent for a glass syringe 20 (refer to drawing 1 (A)) by anchoring and actuation of this glass syringe 20 on the water supply cock 15 by the side of the hand of the coat tube 47. At this time, the coloring matter liquid which flows the inside of the coat tube 47 passes along the crevice between the closed turning slots 48 of Cups 7a and 7b and inner skin of the coat tube 47, and can give a circular movement. Therefore, in case this coloring matter liquid is injected outside from head opening 47a of the coat tube 47, it spreads broadly.

[0053] Moreover, by retreating the coat tube 47, after sprinkling coloring matter, where Cups 7a and 7b are exposed, as it is shown in drawing 7 (B) through the actuation piece 43 and the link boards 42a and 42b by advancing the slider 12 of a control unit 3, Cups 7a and 7b are opened. In this condition, Cups 7a and 7b are made to contact a body tissue, and a body tissue is excised and it extracts.

[0054] Then, if it is in the thing of the above-mentioned configuration, while forming the coat tube

47 in the outside of the sheath section 4 free [ an attitude in the direction of an axial center of the sheath section 4 ] In the condition that both the cups 7a and 7b are closed by the peripheral face of the cups 7a and 7b of both the forceps elements 6a and 6b The turning slot 48 connected spirally is formed, and where Cups 7a and 7b are closed beforehand, he is trying for this cup 7a and the whole 7b to advance the coat tube 47 in a wrap location, in case coloring matter liquid is sent. In this condition and by sending coloring matter liquid by actuation of a glass syringe 20 The crevice between the turning slot 48 of the cups 7a and 7b from which the flowing coloring matter liquid closed the inside of the coat tube 47, and the inner skin of the coat tube 47 A passage, Since it was made to spread broadly when a circular movement was able to be given and this coloring matter liquid was injected outside from head opening 47a of the coat tube 47 Coloring matter liquid can be sprinkled to the large area of membrane in the living body with the gestalt of this operation as well as the gestalt of the 1st operation, and while being able to do easily the activity which sprinkles coloring matter liquid broadly, there is an effect which can lessen the amount of the coloring matter used compared with the former.

[0055] Moreover, drawing 8 (A) and (B) show the gestalt of operation of the 6th of this invention. The gestalt of this operation changes the 5th configuration of the forceps elements 6a and 6b of the treatment implement 1 for endoscopes of the gestalt (refer to drawing 7 (A) and (B)) of operation as follows.

[0056] That is, with the gestalt of this operation, two or more blowout holes 51 were formed in the outside surface of the cups 7a and 7b of both the forceps elements 6a and 6b, and it has flowed with the inside of Cups 7a and 7b. Furthermore, the flow hole 52 is formed in the back end section of Cups 7a and 7b.

[0057] Moreover, the outer-diameter size of Cups 7a and 7b is mostly set as the diameter of said with the inside diameter of the coat tube 47 in the condition that both the cups 7a and 7b are closed as shown in drawing 8 (A). Therefore, when the coat tube 47 advances the outside of Cups 7a and 7b to a wrap location, Cups 7a and 7b can be covered without a crevice by the coat tube 47.

[0058] Next, an operation of the above-mentioned configuration is explained. With the gestalt of this operation, in case coloring matter liquid is sent, as beforehand shown in drawing 8 (A), where Cups 7a and 7b are closed, this cup 7a and the whole 7b advance the coat tube 47 in a wrap location.

[0059] In this condition, coloring matter liquid is sent for a glass syringe 20 (refer to drawing 1 (A)) by anchoring and actuation of this glass syringe 20 on the water supply cock 15 by the side of the hand of the coat tube 47. At this time, water is supplied to the coloring matter liquid which flows through the crevice between the sheath section 4 and the coat tube 47 to a head in the inside of the coat tube 47. Then, coloring matter liquid passes the flow hole 52 of the closed cups 7a and 7b, goes into the interior of Cups 7a and 7b, is sprinkled outside from the blowout hole 51 at a radial, and spreads to wide range membrane.

[0060] Moreover, by retreating the coat tube 47, after sprinkling coloring matter, where Cups 7a and 7b are exposed, as it is shown in drawing 8 (B) through the actuation piece 43 and the link boards 42a and 42b by advancing the slider 12 of a control unit 3, Cups 7a and 7b are opened. In this condition, Cups 7a and 7b are made to contact a body tissue, and a body tissue is excised and it extracts.

[0061] Then, the flow hole 52 is formed in the back end section of Cups 7a and 7b, and where Cups 7a and 7b are closed beforehand, he is trying for this cup 7a and the whole 7b to advance the coat tube 47 in a wrap location, in case coloring matter liquid is sent while forming two or more blowout holes 51 in the outside surface of the cups 7a and 7b of both the forceps elements 6a and 6b, if it is in the thing of the above-mentioned configuration. In this condition and by sending coloring matter liquid by actuation of a glass syringe 20 Since pass the flow hole 52 of the cups 7a and 7b from which the flowing coloring matter liquid closed the inside of the coat tube 47, and it goes into the interior of Cups 7a and 7b, is sprinkled outside from the blowout hole 51 at a radial and was made to spread broadly Coloring matter liquid can be sprinkled to the large area of membrane in the living body with the gestalt of this operation as well as the gestalt of the 1st operation, and while being able to do easily the activity which sprinkles coloring matter liquid broadly, there is an effect which can lessen the amount of the coloring matter used compared with the former.

[0062] In addition, as for this invention, it is needless to say that deformation implementation can be

variously carried out in the range which is not limited to the gestalt of the above-mentioned implementation and does not deviate from the summary of this invention. Next, other characteristic technical matters of this application are written in addition as follows.

Account (additional remark term 1) The sheath section which can be inserted in the forceps channel of an endoscope, The forceps of the couple which can be opened and closed and which was prepared at the head of said sheath section, and the actuation means which fixed to said forceps and extended to the hand side of said sheath section, the object for water supply which fixed to the hand side of said sheath section, and fixed to the control unit which connected said actuation means, and said control unit -- the treatment implement for endoscopes possessing a mouthpiece -- setting -- said object for water supply -- the treatment implement for endoscopes characterized by establishing the spraying means of the liquid poured in from a mouthpiece.

[0063] (The conventional technology of the additional remark term 1) Although inserting a bioptome in the channel of an endoscope and extracting a part of lesion is performed after observing the lesion section with an endoscope to extract a body tissue conventionally, the case where distinction with a lesion and a normal part is hard to be attached is alike occasionally, and has been carried out. In that case, before inserting a bioptome, a coloring matter spraying tube is inserted in the forceps channel of an endoscope, and coloring matter is sprinkled to the large area of membrane, and it colors.

Thereby, the boundary of a lesion and a normal part becomes clear. Next, a coloring matter spraying tube is sampled from a forceps channel, and the lesion section is extracted with a bioptome.

However, there was a defect of insert-and-remove actuation of a coloring matter spraying tube and a bioptome having been complicated, and taking time and effort. Then, the structure of the bioptome which enabled it to sprinkle coloring matter to membrane through the interior of a bioptome is indicated in JP,4-146741,A.

[0064] (Technical problem which the additional remark term 1 tends to solve) However, since coloring matter is linearly emitted from the outlet section of coloring matter with the structure currently indicated by JP,4-146741,A, it is difficult to color the large area of membrane at once. Therefore, in order to sprinkle coloring matter to the large area of membrane, actuation of shaking an endoscope or forceps vertically and horizontally is needed, and actuation becomes complicated. Moreover, there was a trouble that the amount of the coloring matter used increased.

[0065] (The object of the additional remark term 1) This design was made in view of the aforementioned problem, and aims at offering the treatment implement for endoscopes which can sprinkle coloring matter to the large area of membrane by easy actuation.

[0066] (The means for solving a technical problem of the additional remark term 1, and operation) This design is set to the treatment implement for endoscopes. The sheath section which can be inserted in the forceps channel of an endoscope, and the forceps of the couple which can be opened and closed and which was prepared at the head of said sheath section, In the treatment implement for endoscopes possessing a mouthpiece the control unit which fixed to said forceps, fixed to the actuation means [ which extended to the hand side of said sheath section ], and hand side of said sheath section, and connected said actuation means, and said control unit -- the object for water supply -- said object for water supply -- it is characterized by establishing the spraying means of the liquid poured in from a mouthpiece. the treatment implement for endoscopes -- the forceps channel of an endoscope -- inserting -- the object for water supply -- anchoring and coloring matter liquid are poured into a mouthpiece for a glass syringe. As for coloring matter liquid, existence of breadth and a lesion and a boundary become clear with a spraying means at the large area of membrane. Then, open forceps, a lesion is made to contact, forceps are closed as it is, and an organization is extracted. Extraction of the treatment implement for endoscopes is carried out from a forceps channel, and extraction organizations are collected.

[0067] (Effect of the invention of the additional remark term 1) It becomes fog-like, and is spouted and coloring matter liquid becomes possible [ sprinkling coloring matter to the large area of membrane by simple liquid-sending actuation of a glass syringe ]. Therefore, in order to sprinkle coloring matter broadly, it is unnecessary and complicated actuation of shaking forceps vertically and horizontally can lessen the amount of the coloring matter used.

[0068] (Additional remark term 2) Treatment implement for endoscopes given in the additional remark term 1 characterized by for said spraying means approaching said forceps and establishing it.

(Additional remark term 3) Treatment implement for endoscopes given in the additional remark terms 1-2 characterized by said spraying means being constituted by the spiral turning slot.

[0069] (Additional remark term 4) Treatment implement for endoscopes given in the additional remark terms 1-3 characterized by forming said forceps with the elastic body possessing the arm energized in the direction of outside.

(Additional remark term 5) Treatment implement for endoscopes given in the additional remark terms 1-4 characterized by covering the outside surface of said sheath section and arranging said spiral turning slot inside the sheath section.

[0070] (Additional remark term 6) a hand side -- said object for water supply -- treatment implement for endoscopes given in the additional remark terms 1-4 characterized by inserting in the lumen of said sheath section the water supply duct which connected the mouthpiece.

(Additional remark term 7) Treatment implement for endoscopes given in the additional remark terms 1-4 characterized by installing said water supply duct in the outside of said sheath section side by side.

[0071] (Additional remark term 8) Treatment implement for endoscopes given in the additional remark terms 1-3 characterized by establishing said spiral turning slot in the outside surface of said forceps.

(Additional remark term 9) Treatment implement for endoscopes given in the additional remark terms 1-2 characterized by being constituted by the supplied-air means and water supply means which were connected to two openings in which said spraying means was formed by approaching said forceps, and said each opening.

(Additional remark term 10) Treatment implement for endoscopes given in the additional remark terms 1-2 characterized by being constituted with two or more holes with which said spraying means was formed in said forceps front face.

[0072]

[Effect of the Invention] Since a spraying means to continue and sprinkle the liquid which flows out of the outlet of an aqueduct outside in a large range was established according to this invention, coloring matter can be sprinkled to the large area of the membrane of a body tissue by easy actuation, and the amount of the coloring matter used can be lessened.

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[Translation done.]

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**TECHNICAL FIELD**

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[The technical field to which invention belongs] This invention relates to the treatment implement for endoscopes which passes, excises the body tissue of a patient's inside of the body endoscopically, and extracts the preparation.

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**PRIOR ART**

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[Description of the Prior Art] although inserting a bioptome in the channel of an endoscope and extracting a part of lesion section is performed after inserting an endoscope in a patient's inside of the body beforehand and observing the lesion section with this endoscope from the former, in extracting body tissues, such as the lesion section of a patient's inside of the body, the case where distinction with the lesion part of a body tissue and a normal part is hard to be attached is alike occasionally, and has been carried out.

[0003] In such a case, before inserting a bioptome, a coloring matter conveyance tube is inserted in the forceps channel of an endoscope, and he sprinkles the coloring matter sent from this coloring matter conveyance tube inside of the body, and is trying to color it the membrane of a body tissue. Thereby, the boundary of a lesion part and a normal part becomes clear. It is in this condition, next a coloring matter conveyance tube is sampled from a forceps channel, it changes to a bioptome, and the lesion section is extracted with this bioptome.

[0004] Moreover, liquid passage is formed in the interior of a bioptome at JP,4-146741,A, coloring matter is supplied to the inside of the body through the liquid passage inside this bioptome, and the structure of the bioptome it enabled it to color the membrane of a body tissue is indicated.

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**EFFECT OF THE INVENTION**

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(Effect of the invention of the additional remark term 1) It becomes fog-like, and is spouted and coloring matter liquid becomes possible [ sprinkling coloring matter to the large area of membrane by simple liquid-sending actuation of a glass syringe ]. Therefore, in order to sprinkle coloring matter broadly, it is unnecessary and complicated actuation of shaking forceps vertically and horizontally can lessen the amount of the coloring matter used.

[0068] (Additional remark term 2) Treatment implement for endoscopes given in the additional remark term 1 characterized by for said spraying means approaching said forceps and establishing it.

(Additional remark term 3) Treatment implement for endoscopes given in the additional remark terms 1-2 characterized by said spraying means being constituted by the spiral turning slot.

[0069] (Additional remark term 4) Treatment implement for endoscopes given in the additional remark terms 1-3 characterized by forming said forceps with the elastic body possessing the arm energized in the direction of outside.

(Additional remark term 5) Treatment implement for endoscopes given in the additional remark terms 1-4 characterized by covering the outside surface of said sheath section and arranging said spiral turning slot inside the sheath section.

[0070] (Additional remark term 6) a hand side -- said object for water supply -- treatment implement for endoscopes given in the additional remark terms 1-4 characterized by inserting in the lumen of said sheath section the water supply duct which connected the mouthpiece.

(Additional remark term 7) Treatment implement for endoscopes given in the additional remark terms 1-4 characterized by installing said water supply duct in the outside of said sheath section side by side.

[0071] (Additional remark term 8) Treatment implement for endoscopes given in the additional remark terms 1-3 characterized by establishing said spiral turning slot in the outside surface of said forceps.

(Additional remark term 9) Treatment implement for endoscopes given in the additional remark terms 1-2 characterized by being constituted by the supplied-air means and water supply means which were connected to two openings in which said spraying means was formed by approaching said forceps, and said each opening.

(Additional remark term 10) Treatment implement for endoscopes given in the additional remark terms 1-2 characterized by being constituted with two or more holes with which said spraying means was formed in said forceps front face.

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**TECHNICAL PROBLEM**

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[Problem(s) to be Solved by the Invention] However, after inserting the coloring matter conveyance tube in the forceps channel of an endoscope and completing the coloring to the membrane of a body tissue, when it is made the configuration which samples a coloring matter conveyance tube from a forceps channel, changes to a bioptome, and extracts the lesion section with this bioptome, insert-and-remove actuation of a coloring matter spraying tube and a bioptome is complicated, and there is a time-consuming problem.

[0006] Moreover, since coloring matter is linearly emitted from the outlet section of the liquid passage inside a bioptome with the structure currently indicated by JP,4-146741,A at the time of the coloring to the membrane of a body tissue, it is difficult to color the large area of membrane at once. Therefore, since actuation of shaking an endoscope or forceps vertically and horizontally is needed in order to make coloring matter color the large area of membrane, the actuation becomes complicated. Furthermore, when neck swing actuation of such an endoscope or forceps is performed, there is also a problem that the amount of the coloring matter used increases.

[0007] This invention was made paying attention to the above-mentioned situation, and the object can sprinkle coloring matter to the large area of the membrane of a body tissue by easy actuation, and is to offer the treatment implement for endoscopes which a possibility that the amount of the coloring matter used may increase according to a rank does not have, either.

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## MEANS

[Means for Solving the Problem] The sheath section by which this invention was formed of a long and slender shell which can be inserted in a forceps channel of an endoscope, and an aqueduct was formed in a pipe, A control unit connected with a hand side of this sheath section, and the head treatment section which was arranged at a head of said sheath section and was equipped with a forceps element of a couple which can be opened and closed freely, An actuation means of said forceps element by which a point was connected with said forceps element, and the end face section extended to a hand side of said sheath section, and was connected with said control unit, an object for water supply which fixed to said control unit and was opened for free passage by the end face section of an aqueduct of said sheath circles -- in a treatment implement for endoscopes possessing a mouthpiece, it is the treatment implement for endoscopes characterized by establishing a spraying means to continue and sprinkle a liquid which flows out of an outlet of said aqueduct outside in a large range. and -- the time of coloring to membrane of a body tissue -- a treatment implement for endoscopes -- a forceps channel of an endoscope -- inserting -- an object for water supply -- anchoring and coloring matter liquid are poured into a mouthpiece for a glass syringe. At this time, the inside of an aqueduct of sheath circles is flowed, and coloring matter liquid which flows out of an outlet of an aqueduct outside covers a large range with a spraying means, and is sprinkled. Therefore, it is made for a boundary of existence of breadth and a lesion part, and the lesion part and a normal part to become clear at a large area of membrane of a body tissue.

[0009]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the 1st of this invention is explained with reference to drawing 1 (A) - (C). Drawing 1 (A) shows the outline configuration of the treatment implement 1 whole for endoscopes of the gestalt of this operation. The long and slender insertion section 2 which can be inserted in the forceps channel of the endoscope which is not illustrated, and the control unit 3 by the side of the hand connected with the end face section of this insertion section 2 are formed in the treatment implement 1 for endoscopes of the gestalt of this operation.

[0010] Moreover, the shell 4 with flexibility, for example, the sheath section formed with the close-winding coil, is formed in the insertion section 2. The head hard cylindrical shape-like section 5 has fixed at the head of this sheath section 4.

[0011] Furthermore, the head treatment section 6 is arranged by the point of the sheath section 4. The forceps elements 6a and 6b of the couple which can be opened and closed freely are formed in this head treatment section 6. Each forceps elements 6a and 6b are arranged at a head side, as shown in drawing 1 (B), are arranged at a cup [ which extract a body tissue ] 7a [ 7 ] and 7b, and hand side, and consist of the arm sections 8a and 8b which have spring nature. And each forceps elements 6a and 6b are formed possible [ \*\*\*\* ] to the sheath section 4.

[0012] Furthermore, the forceps elements 6a and 6b and the head hard section 5 are formed with synthetic-resin materials, such as metallic materials, such as stainless steel, titanium, brass, and a nickel titanium alloy, and acrylonitrile styrene butadiene rubber, a polycarbonate. Here, the arm sections 8a and 8b of each forceps elements 6a and 6b are formed of the flat spring energized in the direction developed in the direction of outside (the open direction) which leaves mutually between both cup 7a and 7b.

[0013] Moreover, two or more V character-like projections 9a and 9b are formed in Cups 7a and 7b

at the point and the lateral portion. And at the time of lock out of both the cups 7a and 7b (at the time of contact), the mountain and valley of the mutual V character-like projections 9a and 9b gear.

[0014] Furthermore, the point of the inlet connection material 10 has fixed in the end face section of the arm sections 8a and 8b of the forceps elements 6a and 6b. In the hand side edge section of this inlet connection material 10, the point of the actuation wire 11 inserted in the interior of the sheath section 4 has fixed. The end face section of this actuation wire 11 has extended to the control unit 3 side through the interior of the sheath section 4.

[0015] Moreover, in a control unit 3, it is a slider.

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**OPERATION**

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(The means for solving a technical problem of the additional remark term 1, and operation) This design is set to the treatment implement for endoscopes, The sheath section which can be inserted in the forceps channel of an endoscope, and the forceps of the couple which can be opened and closed and which was prepared at the head of said sheath section, In the treatment implement for endoscopes possessing a mouthpiece the control unit which fixed to said forceps, fixed to the actuation means [ which extended to the hand side of said sheath section ], and hand side of said sheath section, and connected said actuation means, and said control unit -- the object for water supply -- said object for water supply -- it is characterized by establishing the spraying means of the liquid poured in from a mouthpiece. the treatment implement for endoscopes -- the forceps channel of an endoscope -- inserting -- the object for water supply -- anchoring and coloring matter liquid are poured into a mouthpiece for a glass syringe. As for coloring matter liquid, existence of breadth and a lesion and a boundary become clear with a spraying means at the large area of membrane. Then, open forceps, a lesion is made to contact, forceps are closed as it is, and an organization is extracted. Extraction of the treatment implement for endoscopes is carried out from a forceps channel, and extraction organizations are collected.

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**DESCRIPTION OF DRAWINGS**

[Brief Description of the Drawings]

[Drawing 1] (C) is drawing of longitudinal section in which the gestalt of operation of the 1st of this invention is shown, (A) shows the side elevation of the whole treatment implement for endoscopes, and (B) shows the important section configuration of the point of the treatment implement for endoscopes, and drawing of longitudinal section showing the condition that the forceps element excised the body tissue.

[Drawing 2] Drawing of longitudinal section showing the important section configuration of the 2nd of the point of the treatment implement for endoscopes of the gestalt of operation of this invention.

[Drawing 3] Drawing of longitudinal section showing the condition of having moved the water supply tube of the treatment implement for endoscopes of the gestalt of the 2nd operation to the hand side.

[Drawing 4] Drawing of longitudinal section showing the condition of having made the storage space of sheath circles of the treatment implement for endoscopes of the gestalt of the 2nd operation containing an excision organization.

[Drawing 5] It is drawing of longitudinal section in which the perspective diagram in which (A) shows the important section configuration of the point of the treatment implement for endoscopes, and (B) show the important section configuration of the point of the treatment implement for endoscopes by showing the gestalt of operation of the 3rd of this invention.

[Drawing 6] It is drawing of longitudinal section in which the perspective diagram in which (A) shows the important section configuration of the point of the treatment implement for endoscopes, and (B) show the important section configuration of the point of the treatment implement for endoscopes by showing the gestalt of operation of the 4th of this invention.

[Drawing 7] It is drawing of longitudinal section showing drawing of longitudinal section showing the condition that (A) made sheath circles contain the cup of the treatment implement for endoscopes by the closed state, and the condition of (B) having exposed the cup of the treatment implement for endoscopes in the sheath section, and having opened, by showing the gestalt of operation of the 5th of this invention.

[Drawing 8] It is drawing of longitudinal section showing drawing of longitudinal section showing the condition that (A) made sheath circles contain the cup of the treatment implement for endoscopes by the closed state, and the condition of (B) having exposed the cup of the treatment implement for endoscopes in the sheath section, and having opened, by showing the gestalt of operation of the 6th of this invention.

[Description of Notations]

4 Sheath Section

3 Control Unit

6 Head Treatment Section

6a, 6b Forceps element

12 Slider (Actuation Means)

15 Water Supply Cock (for Water Supply Mouthpiece)

14 Aqueduct

17 Spraying Means

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[Translation done.]

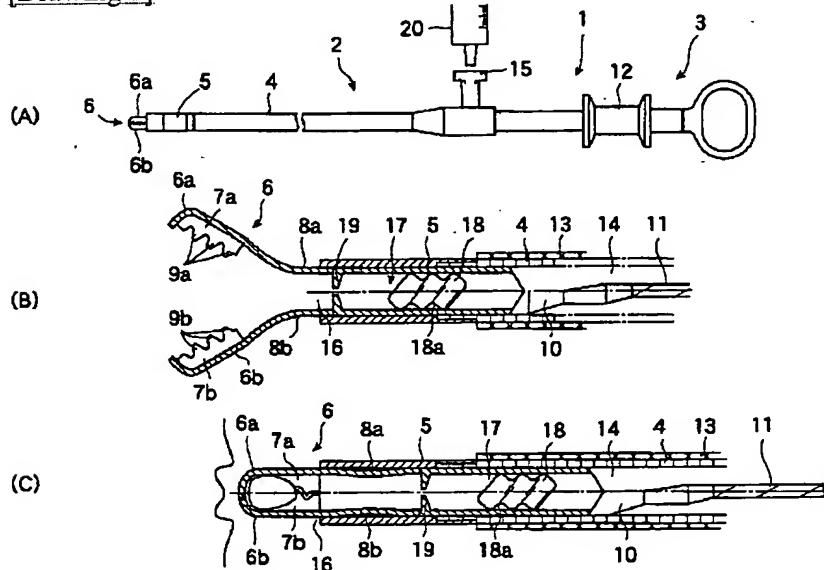
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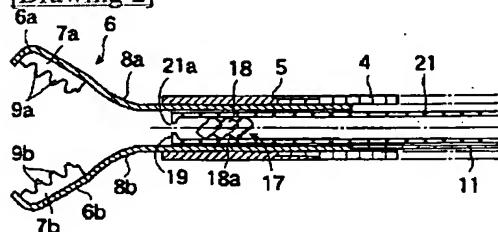
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## DRAWINGS

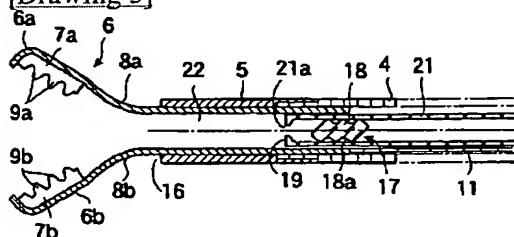
[Drawing 1]



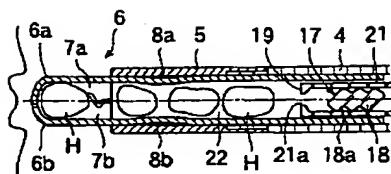
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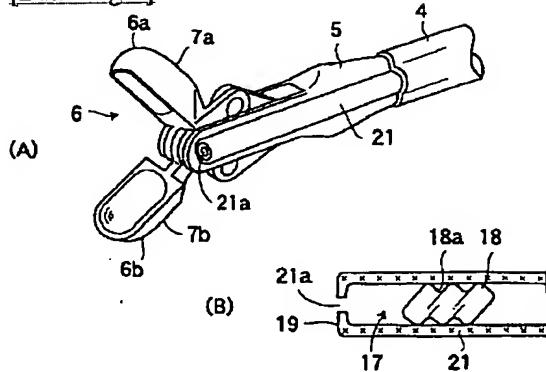
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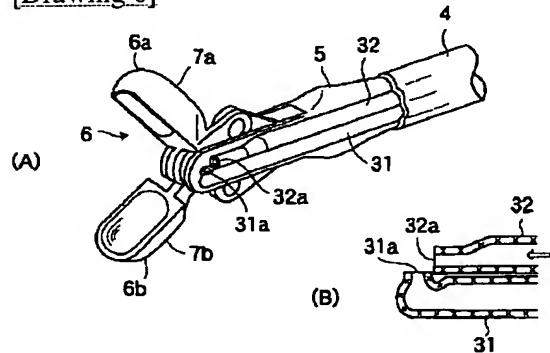
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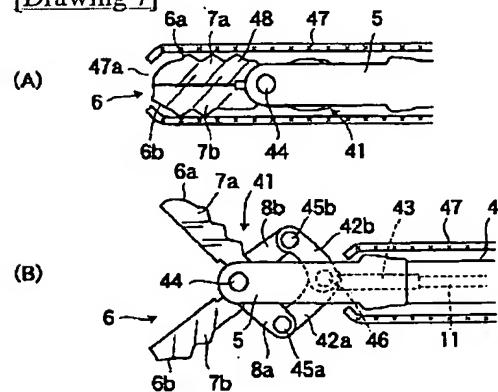
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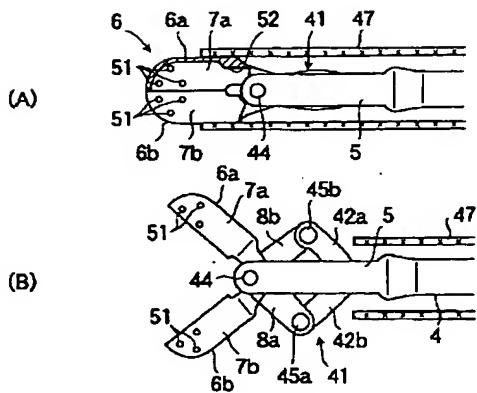
[Drawing 6]



[Drawing 7]



[Drawing 8]



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[Translation done.]

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オリンパス光学工業株式会社

東京都渋谷区幡ヶ谷2丁目43番2号

(72) 発明者 鈴木 孝之

東京都渋谷区幡ヶ谷2丁目43番2号 オリ  
ンパス光学工業株式会社内

(72) 発明者 岡田 勉

東京都渋谷区幡ヶ谷2丁目43番2号 オリ  
ンパス光学工業株式会社内

(72) 発明者 山本 哲也

東京都渋谷区幡ヶ谷2丁目43番2号 オリ  
ンパス光学工業株式会社内

(74) 代理人 弁理士 鈴江 武彦 (外4名)

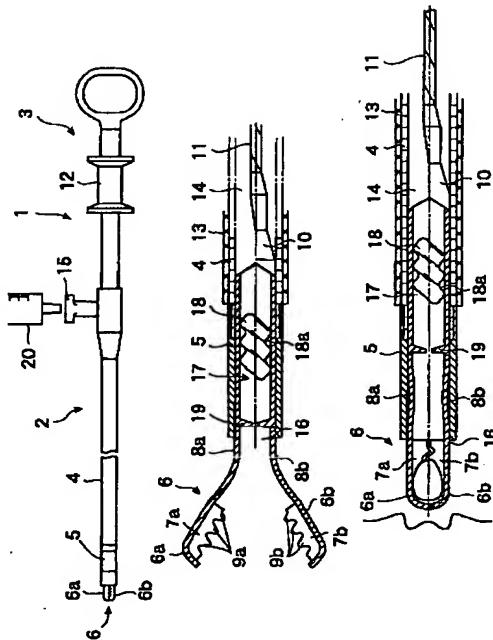
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## (54) 【発明の名称】内視鏡用処置具

## (57) 【要約】

【課題】本発明は、簡単な操作で色素を生体組織の粘膜の広範囲に散布することができ、色素の使用量を少なくすることができる内視鏡用処置具を提供することを最も主要な特徴とする。

【解決手段】シース部4内の送水路14の出口から外部に流出される液体を広い範囲に亘り散布する旋回部材18と、絞り部材19とからなる散布手段17を設けたものである。



## 【特許請求の範囲】

【請求項1】 内視鏡の鉗子チャンネルに挿通可能な細長い管体によって形成され、かつ管内に送水路が形成されたシース部と、

このシース部の手元側に連結された操作部と、

前記シース部の先端に配設され、開閉自在の一対の鉗子要素を備えた先端処置部と、

先端部が前記鉗子要素に連結され、基端部が前記シース部の手元側まで延出されて前記操作部に連結された前記鉗子要素の操作手段と、

前記操作部に固着され、前記シース部内の送水路の基端部に連通された送水用口金とを具備する内視鏡用処置具において、

前記送水路の出口から外部に流出される液体を広い範囲に亘り散布する散布手段を設けたことを特徴とする内視鏡用処置具。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、経内視鏡的に患者の体内の生体組織を切除して組織標本を採取する内視鏡用処置具に関する。

## 【0002】

【従来の技術】従来から、患者の体内の病変部等の生体組織を採取する場合には予め患者の体内に内視鏡を挿入し、この内視鏡にて病変部を観察した後、内視鏡のチャンネルに生検鉗子を挿入して病変部の一部を採取することが行われているが、生体組織の病変部位と正常な部位との区別がつきにくい場合が往々にしてある。

【0003】そのような場合には、生検鉗子を挿入する前に色素搬送チューブを内視鏡の鉗子チャンネルに挿入し、この色素搬送チューブから送られる色素を体内に散布して生体組織の粘膜に着色するようしている。これにより病変部位と正常の部位の境界が明らかとなる。この状態で、次に、色素搬送チューブを鉗子チャンネルから抜き取り、生検鉗子に入れ替えてこの生検鉗子により病変部を採取するようになっている。

【0004】また、特開平4-146741号公報には生検鉗子の内部に液体流路を形成し、この生検鉗子の内部の液体流路を通して色素を体内に供給し、生体組織の粘膜に着色できるようにした生検鉗子の構造が開示されている。

## 【0005】

【発明が解決しようとする課題】しかしながら、内視鏡の鉗子チャンネルに色素搬送チューブを挿入し、生体組織の粘膜への着色が終了した後、鉗子チャンネルから色素搬送チューブを抜き取り、生検鉗子に入れ替えてこの生検鉗子により病変部を採取する構成にした場合には色素散布チューブ、生検鉗子の挿抜操作が煩雑であり、手間が掛かる問題がある。

【0006】また、特開平4-146741号公報に開

示されている構造では、生体組織の粘膜への着色作業時には生検鉗子の内部の液体流路の出口部から色素が直線的に放出されるため、粘膜の広範囲を一度に着色することは困難である。そのため、粘膜の広範囲に色素を着色させるためには、内視鏡または鉗子を上下左右に振る等の操作が必要になるので、その操作が煩雑となる。さらに、このような内視鏡または鉗子の首振り操作を行った場合には色素の使用量が多くなるという問題もある。

【0007】本発明は上記事情に着目してなされたもので、その目的は、簡単な操作で色素を生体組織の粘膜の広範囲に散布することができ、色素の使用量が格別に多くなるおそれもない内視鏡用処置具を提供することにある。

## 【0008】

【課題を解決するための手段】本発明は内視鏡の鉗子チャンネルに挿通可能な細長い管体によって形成され、かつ管内に送水路が形成されたシース部と、このシース部の手元側に連結された操作部と、前記シース部の先端に配設され、開閉自在の一対の鉗子要素を備えた先端処置部と、先端部が前記鉗子要素に連結され、基端部が前記シース部の手元側まで延出されて前記操作部に連結された前記鉗子要素の操作手段と、前記操作部に固着され、前記シース部内の送水路の基端部に連通された送水用口金とを具備する内視鏡用処置具において、前記送水路の出口から外部に流出される液体を広い範囲に亘り散布する散布手段を設けたことを特徴とする内視鏡用処置具である。そして、生体組織の粘膜への着色作業時には内視鏡用処置具を内視鏡の鉗子チャンネルに挿入し、送水用口金に注射筒を取り付け、色素液を注入する。このとき、シース部内の送水路内を流れ、送水路の出口から外部に流出される色素液は散布手段により広い範囲に亘り散布される。そのため、生体組織の粘膜の広範囲に広がり、病変部位の存在と、その病変部位と正常な部位との境界が明らかになるようにしたものである。

## 【0009】

【発明の実施の形態】以下、本発明の第1の実施の形態を図1(A)～(C)を参照して説明する。図1(A)は本実施の形態の内視鏡用処置具1全体の概略構成を示すものである。本実施の形態の内視鏡用処置具1には、図示しない内視鏡の鉗子チャンネルに挿通可能な細長い挿入部2と、この挿入部2の基端部に連結された手元側の操作部3とが設けられている。

【0010】また、挿入部2には可撓性を持つ管体、例えば密巻コイルによって形成されたシース部4が設けられている。このシース部4の先端には円筒形状の先端硬質部5が固着されている。

【0011】さらに、シース部4の先端部には先端処置部6が配設されている。この先端処置部6には開閉自在の一対の鉗子要素6a, 6bが設けられている。各鉗子要素6a, 6bは図1(B)に示すように先端側に配置

され、生体組織を採取するカップ7a, 7bと、手元側に配置され、バネ性を有するアーム部8a, 8bとから構成されている。そして、各鉗子要素6a, 6bはシース部4に対して突没可能に設けられている。

【0012】さらに、鉗子要素6a, 6b及び先端硬質部5はステンレス鋼、チタン、黄銅、ニッケル・チタニウム合金等の金属材料や、アクリロニトリル・ブタジエン・スチレン、ポリカーボネート等の合成樹脂材料により形成されている。ここで、各鉗子要素6a, 6bのアーム部8a, 8bは、両カップ7a, 7b間を互いに離れる外方向（開方向）に展開させる方向に付勢された板ばねによって形成されている。

【0013】また、カップ7a, 7bには先端部及び側面部に複数のV字状突起9a, 9bが設けられている。そして、両カップ7a, 7bの閉塞時（接触時）には互いのV字状突起9a, 9bの山と谷とが噛み合うようになっている。

【0014】さらに、鉗子要素6a, 6bのアーム部8a, 8bの基端部には接続部材10の先端部が固着されている。この接続部材10の手元側端部にはシース部4の内部に挿通された操作ワイヤ11の先端部が固着されている。この操作ワイヤ11の基端部はシース部4の内部を通って操作部3側に延出されている。

【0015】また、操作部3にはスライダ（操作手段）12が軸方向に沿って摺動自在に設けられている。このスライダ12には操作ワイヤ11の基端部が固着されている。そして、このスライダ12のスライド操作にともない操作ワイヤ11がシース部4の軸方向に沿って押し引き操作され、この操作ワイヤ11の動作にともない鉗子要素6a, 6bがシース部4に対して突没操作されるようになっている。

【0016】ここで、操作ワイヤ11の押出し動作にともない鉗子要素6a, 6bがシース部4の前方に押出し操作される。そして、図1（B）に示すようにアーム部8a, 8bが先端硬質部5から前方に突出された状態では、両カップ7a, 7b間が開くようになっている。

【0017】また、操作ワイヤ11の引き込み動作にともない図1（C）に示すようにアーム部8a, 8bが先端硬質部5内に完全に引き込まれるとカップ7a, 7bは閉じて互いに接触するようになっている。このとき、両カップ7a, 7b間には生体組織を噛み切るのに十分な切断力が印加されるようになっている。

【0018】さらに、シース部4の外周面には全長に渡って、ポリテトラフルオロエチレン、ポリアミド、ポリエチレン、ポリテトラフルオロエチレン・パーフルオロ・アルコキシ・エチレン等の合成樹脂材料で形成された被覆材13で水密に被覆されている。そして、このシース部4の内部には送水路14が形成されている。

【0019】また、操作部3にはシース部4の送水路14に連通される送水コック（送水用口金）15が設けら

れています。さらに、このシース部4の管内の送水路14の先端部は先端硬質部5の先端の開口部（出口）16に連通されている。そして、操作部3側の送水コック15から供給される液体はシース部4の管内の送水路14を通して先端硬質部5の先端の開口部16まで送水されるようになっている。

【0020】また、接続部材10の内部には、送水路14の出口から外部側に流出される液体を広い範囲に亘り散布する散布手段17が設けられている。この散布手段17には接続部材10の内部に固着された旋回部材18と、絞り部材19とが設けられている。ここで、旋回部材18の外周面には螺旋状の旋回溝18aが形成されている。さらに、絞り部材19は旋回部材18よりも送水路14の出口側に配置されている。

【0021】次に、上記構成の作用について説明する。本実施の形態の内視鏡用処置具1の使用時には予め操作部3のスライダ12を後端（手元）側に移動させ、先端処置部6のアーム部8a, 8bを先端硬質部5に引き込んだ状態で挿入部2を内視鏡の鉗子チャンネルを通して体腔内に挿入する。

【0022】その後、スライダ12を先端側に移動させ、操作ワイヤ11を介して鉗子要素6a, 6bを先端硬質部5に対して先端側に移動させる。これにより、アーム部8a, 8bを先端硬質部5から突出させ、図1（B）に示すようにアーム部8a, 8bのばね力によってカップ7a, 7bを外側に展開させる（開操作する）とともに、開口部16を開口させる。

【0023】続いて、色素液の入った注射筒20を送水コック15に取付ける。この状態で、注射筒20の操作によりシース部4の送水路14内に色素液を送り込む。このとき、送水路14内を流れる色素液は旋回部材18を通過する際に、この旋回部材18の旋回溝18aに沿って旋回運動を与えられる。そして、この色素液の旋回流は次の絞り部材19を通過することにより霧状となり、送水路14の出口の開口部16から外部に流出される液体が広い範囲に亘り散布され、広範囲の粘膜に散布される。これにより患者の体内の病変部の存在及び病変部位と正常の部位との間の境界が明らかとなる。

【0024】この後、カップ部7a, 7bを体腔内の生体組織の採取部位に当接させた状態で、押圧する。さらに、この状態でスライダ12を手元側に引き、操作ワイヤ11を介して鉗子要素6a, 6bを先端硬質部5に対して手元側に移動して、アーム部8a, 8bを先端硬質部5に収納する。このとき、アーム部8a, 8bが先端硬質部5に収納される動作にともないカップ7a, 7bは閉じる方向に動き、互いに接近する。そして、図1（C）に示すようにアーム部8a, 8bが先端硬質部5に完全に収納された状態で、カップ7a, 7bは互いに接触し、生体組織の切除が行われる。

【0025】また、生体組織の切除動作の終了後、挿入

部2を内視鏡の鉗子チャンネルより引き出し、スライダ12を操作してカップ7a, 7bを展開させ、切除された生体組織の組織片を回収する。

【0026】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態では接続部材10の内部に、旋回部材18と、絞り部材19とを設け、送水路14内を流れる色素液が旋回部材18を通過する際に、この旋回部材18の旋回溝18aに沿って旋回運動を与え、この色素液の旋回流が次の絞り部材19を通過することにより霧状となり、送水路14の出口の開口部16から外部に流出される液体が広い範囲に亘り散布され、広範囲の粘膜に散布されるようにしたので、この散布手段17により、注射筒20の単純な送液操作のみで体内の粘膜の広範囲に色素液を散布することができる。そのため、色素液を広範囲に散布するために従来のように鉗子を上下左右に振る等の煩雑な操作が必要なく、色素液を広範囲に散布する作業を簡単に行うことができる。さらに、従来に比べて色素の使用量を少なくすることができます。

【0027】また、図2～図4は本発明の第2の実施の形態を示すものである。なお、図2～図4中で、第1の実施の形態(図1(A)～(C)参照)と同一の部分には同一の符号を付してその説明は省略する。

【0028】すなわち、第1の実施の形態ではシース部4の外周面に被覆材13で水密に被覆してシース部4の内部に送水路14を形成した構成を示したが、本実施の形態ではシース部4の内部に色素散布チューブ(送水チューブ)21を軸方向に進退自在に挿通させ、この散布チューブ21の先端部に散布手段17の旋回部材18及び絞り部材19を固着したものである。ここで、絞り部材19は散布チューブ21の先端開口部21aに形成されている。

【0029】また、色素散布チューブ21の手元側は操作部3(図1(A)参照)から外部側に引き出されている。さらに、この色素散布チューブ21の手元側の端部には色素注入用の注射筒20(図1(A)参照)が取付可能な送水コック15(図1(A)参照)が固着されている。

【0030】また、散布チューブ21を手元側に後退させると、シース部4の先端の先端硬質部5内に生体組織の収納空間22が確保される。なお、本実施の形態においてはシース部4の外周面に第1の実施の形態のように合成樹脂材料製の被覆材13(図1(B), (C)参照)による被覆は不要である。

【0031】次に、上記構成の作用について説明する。本実施の形態の内視鏡用処置具1の使用時には第1の実施の形態と同様に内視鏡用処置具1の挿入部2を内視鏡の鉗子チャンネルを通して体腔内に挿入した後、操作部3のスライダ12を先端側に移動操作して図3に示すようにカップ7a, 7bを展開する(開操作する)。

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【0032】続いて、色素液の入った注射筒20を送水コック15に取付け、色素液を散布チューブ21内に送る。このとき、散布チューブ21内を流れる色素液は旋回部材18を通過する際に、この旋回部材18の旋回溝18aに沿って旋回運動を与えられる。そして、この色素液の旋回流は次の絞り部材19を通過することにより霧状となり、散布チューブ21の先端開口部21aから先端硬質部5の開口部16を経て外部に流出される液体が広い範囲に亘り散布され、広範囲の粘膜に散布される。これにより患者の体内の病変部の存在及び病変部位と正常の部位との間の境界が明らかとなる。

【0033】この後、散布チューブ21を手元側に移動させ、先端硬質部5内に収納空間22を確保する。続いて、カップ部7a, 7bを体腔内の生体組織の採取部位に当接させた状態で、押圧する。さらに、この状態でスライダ12を手元側に引き、操作ワイヤ11を介して鉗子要素6a, 6bを先端硬質部5に対して手元側に移動して、アーム部8a, 8bを先端硬質部5に収納する。このとき、アーム部8a, 8bが先端硬質部5に収納される動作にともないカップ7a, 7bは閉じる方向に動き、互いに接近する。そして、図4に示すようにアーム部8a, 8bが先端硬質部5に完全に収納された状態で、カップ7a, 7bは互いに接触し、生体組織の切除が行われる。

【0034】また、カップ7a, 7b間で切除された切除組織Hは図4に示すように収納空間22に収納される。さらに、1つの生体組織Hの切除動作の終了後、再びカップ7a, 7bを開操作して同様に他の生体組織Hの採取が繰り返される。そして、複数の切除組織Hが収納空間22に格納され、目的の生体組織Hの切除動作が終了した後、挿入部2が内視鏡の鉗子チャンネルより引き出される。この状態で、スライダ12を先端側に押し出し操作してカップ7a, 7bを展開(開操作)し、複数の組織片Hを回収する。

【0035】そこで、上記構成のものにあっては次の効果を奏する。すなわち、第1の実施の形態の効果に加えて、本実施の形態では特に散布チューブ21を後退させることにより、先端硬質部5内に切除組織Hの収納空間20が確保され、ここに切除組織Hを収納することができるので、従来のように鉗子を内視鏡の鉗子チャンネルから抜去することなく、色素散布や、複数の生体組織Hの採取等の作業が可能となる。

【0036】また、図5(A), (B)は本発明の第3の実施の形態を示すものである。なお、図5(A), (B)中で、第1の実施の形態(図1(A)～(C)参照)および第2の実施の形態(図2～図4参照)と同一の部分には同一の符号を付してその説明は省略する。

【0037】すなわち、本実施の形態は図5(A)に示すようにシース部4の先端硬質部5の外側に色素散布チューブ21を並設したものである。この色素散布チュー

ブ21の先端部には図5(B)に示すように第2の実施の形態と同様に散布手段17の旋回部材18及び絞り部材19が設けられている。

【0038】そこで、上記構成のものにあっても第2の実施の形態と同様に色素散布チューブ21の内部に散布手段17の旋回部材18及び絞り部材19が設けられているので、本実施の形態の内視鏡用処置具1の使用時には送水コック15に注射筒20を取付けた状態で、注射筒20の単純な送液操作のみで色素散布チューブ21内の散布手段17により、体内の粘膜の広範囲に色素液を散布することができ、色素液を広範囲に散布する作業を簡単に行うことができるとともに、従来に比べて色素の使用量を少なくすることができる効果がある。

【0039】また、図6(A), (B)は本発明の第4の実施の形態を示すものである。本実施の形態は第3の実施の形態(図5(A), (B)参照)のシース部4の先端硬質部5の外側に色素供給チューブ31と空気供給チューブ32とを並設させたものである。

【0040】ここで、色素供給チューブ31の手元側には注射筒20(図1(A)参照)を取り付けられている。さらに、空気供給チューブ32の手元側には図示しない送気ポンプが取り付けられている。

【0041】また、色素供給チューブ31の先端開口部31aは図6(B)に示すようにこのチューブ31の中心線方向に対して直交する状態で上向きに開口されている。さらに、空気供給チューブ32の先端開口部32aは色素供給チューブ31の先端開口部31aからの液体の流出方向である前方に向けて開口されている。そして、色素供給チューブ31の先端開口部31aと空気供給チューブ32の先端開口部32aとは略直角に接している。

【0042】次に、上記構成の作用について説明する。本実施の形態の内視鏡用処置具1の使用時には注射筒20の操作により色素供給チューブ31の内部に色素液を充填させるとともに、送気ポンプにより空気供給チューブ32に高圧で空気を供給する。この場合には、色素供給チューブ31の先端開口部31aと空気供給チューブ32の先端開口部32aとの接点において空気供給チューブ32の先端開口部32aからの空気噴射により圧力が下がり、色素供給チューブ31の先端開口部31aから色素液が吸い上げられ、空気に混入して霧状に噴出される。

【0043】そこで、上記構成のものにあってはシース部4の先端硬質部5の外側に色素供給チューブ31と空気供給チューブ32とを並設させ、空気供給チューブ32の先端開口部32aからの空気噴射により圧力が下がり、色素供給チューブ31の先端開口部31aから色素液が吸い上げられ、空気に混入して霧状に噴出されるようにしたので、本実施の形態でも第1の実施の形態と同

様に体内の粘膜の広範囲に色素液を散布することができ、色素液を広範囲に散布する作業を簡単に行うことができるとともに、従来に比べて色素の使用量を少なくすることができる効果がある。

【0044】また、図7(A), (B)は本発明の第5の実施の形態を示すものである。なお、図7(A), (B)中で、第1の実施の形態(図1(A)～(C)参照)と同一の部分には同一の符号を付してその説明は省略する。

【0045】すなわち、本実施の形態では第1の実施の形態(図1(A)～(C)参照)の鉗子要素6a, 6bの開閉駆動機構としてパンタグラフ式リンク機構41が設けられている。

【0046】このパンタグラフ式リンク機構41では第1の実施の形態(図1(A)～(C)参照)の鉗子要素6a, 6bのカップ7a, 7bのアーム部8a, 8bがバネ性を持たないステンレス鋼等の剛性の金属材料で形成されている。

【0047】これらのアーム部8a, 8bの手元側には図7(B)に示すように2つのリンク板42a, 42b及び1つの駆動駒43がピン44, 45a, 45b, 46により回動自在に連結されている。そして、アーム部8a, 8bと、2つのリンク板42a, 42bと、1つの駆動駒43とによってパンタグラフ式リンク機構41が構成されている。

【0048】さらに、駆動駒43の基端部には操作ワイヤ11が固定されている。この操作ワイヤ11の手元側は操作部3(図1(A)参照)のスライダ12(図1(A)参照)に固定されている。

【0049】また、シース部4の外側には被覆チューブ47がシース部4の軸心方向に進退自在に設けられている。この被覆チューブ47の手元側には送水コック15(図1(A)参照)が固定されている。

【0050】また、両鉗子要素6a, 6bのカップ7a, 7bの外周面には図7(A)に示すように両カップ7a, 7bが閉じられている状態で、螺旋状に連結される旋回溝48が設けられている。この場合、カップ7a, 7bの外周面の旋回溝48は被覆チューブ47をカップ7a, 7bの外側を覆う位置まで前進させたときに、被覆チューブ47の内周面とカップ7a, 7bの旋回溝48の両側の山部の頂点とがほぼ接するような外径寸法に設定されている。

【0051】次に、上記構成の作用について説明する。本実施の形態では色素液を送液する際には予め図7(A)に示すようにカップ7a, 7bを閉じた状態でこのカップ7a, 7b全体を覆う位置に被覆チューブ47を前進させる。

【0052】この状態で、被覆チューブ47の手元側の送水コック15に注射筒20(図1(A)参照)を取り付け、この注射筒20の操作により色素液を送液する。こ

のとき、被覆チューブ47内を流れる色素液は閉じたカップ7a, 7bの旋回溝48と被覆チューブ47の内周面との間の隙間を通り、旋回運動を与えられる。そのため、この色素液が被覆チューブ47の先端開口部47aから外部に噴射される際に広範囲に広がる。

【0053】また、色素を散布した後に、被覆チューブ47を後退させることにより、カップ7a, 7bを露出させた状態で、操作部3のスライダ12を前進させることにより、駆動駒43、リンク板42a, 42bを介して図7(B)に示すようにカップ7a, 7bを開く。この状態で、カップ7a, 7bを生体組織に当接させ、生体組織の切除を行って採取する。

【0054】そこで、上記構成のものにあってはシース部4の外側に被覆チューブ47をシース部4の軸心方向に進退自在に設けるとともに、両鉗子要素6a, 6bのカップ7a, 7bの外周面に両カップ7a, 7bが閉じられている状態で、螺旋状に連結される旋回溝48を設け、色素液を送液する際には予めカップ7a, 7bを閉じた状態でこのカップ7a, 7b全体を覆う位置に被覆チューブ47を前進させるようにしている。そして、この状態で、注射筒20の操作により色素液を送液することにより、被覆チューブ47内を流れる色素液が閉じたカップ7a, 7bの旋回溝48と被覆チューブ47の内周面との間の隙間を通り、旋回運動を与えられ、この色素液が被覆チューブ47の先端開口部47aから外部に噴射される際に広範囲に広がるようにしたので、本実施の形態でも第1の実施の形態と同様に体内の粘膜の広範囲に色素液を散布することができ、色素液を広範囲に散布する作業を簡単に行うことができるとともに、従来に比べて色素の使用量を少なくすることができる効果がある。

【0055】また、図8(A), (B)は本発明の第6の実施の形態を示すものである。本実施の形態は第5の実施の形態(図7(A), (B)参照)の内視鏡用処置具1の鉗子要素6a, 6bの構成を次の通り変更したものである。

【0056】すなわち、本実施の形態では両鉗子要素6a, 6bのカップ7a, 7bの外表面に複数の噴出孔51が設けられ、カップ7a, 7bの内側と導通されている。さらに、カップ7a, 7bの後端部には導通孔52が設けられる。

【0057】また、図8(A)に示すように両カップ7a, 7bが閉じられている状態で、カップ7a, 7bの外径寸法は、被覆チューブ47の内径寸法とほぼ同径に設定されている。そのため、被覆チューブ47をカップ7a, 7bの外側を覆う位置まで前進させたときに、被覆チューブ47でカップ7a, 7bを隙間なく覆うことができるようになっている。

【0058】次に、上記構成の作用について説明する。本実施の形態では色素液を送液する際には予め図8

(A)に示すようにカップ7a, 7bを閉じた状態でこのカップ7a, 7b全体を覆う位置に被覆チューブ47を前進させる。

【0059】この状態で、被覆チューブ47の手元側の送水コック15に注射筒20(図1(A)参照)を取り付け、この注射筒20の操作により色素液を送液する。このとき、シース部4と被覆チューブ47との間の隙間を通して流れる色素液は被覆チューブ47内を先端まで送水される。その後、色素液は閉じたカップ7a, 7bの導通孔52を通過してカップ7a, 7bの内部に入り、噴出孔51から外部に放射状に散布され、広範囲の粘膜に広がる。

【0060】また、色素を散布した後に、被覆チューブ47を後退させることにより、カップ7a, 7bを露出させた状態で、操作部3のスライダ12を前進させることにより、駆動駒43、リンク板42a, 42bを介して図8(B)に示すようにカップ7a, 7bを開く。この状態で、カップ7a, 7bを生体組織に当接させ、生体組織の切除を行って採取する。

【0061】そこで、上記構成のものにあっては両鉗子要素6a, 6bのカップ7a, 7bの外表面に複数の噴出孔51を設けるとともに、カップ7a, 7bの後端部に導通孔52を設け、色素液を送液する際には予めカップ7a, 7bを開じた状態でこのカップ7a, 7b全体を覆う位置に被覆チューブ47を前進させるようにしている。そして、この状態で、注射筒20の操作により色素液を送液することにより、被覆チューブ47内を流れる色素液が閉じたカップ7a, 7bの導通孔52を通過してカップ7a, 7bの内部に入り、噴出孔51から外部に放射状に散布され、広範囲に広がるようにしたので、本実施の形態でも第1の実施の形態と同様に体内の粘膜の広範囲に色素液を散布することができ、色素液を広範囲に散布する作業を簡単に行うことができるとともに、従来に比べて色素の使用量を少なくすることができる効果がある。

【0062】なお、本発明は上記実施の形態に限定されるものではなく、本発明の要旨を逸脱しない範囲で種々変形実施できることは勿論である。次に、本出願の他の特徴的な技術事項を下記の通り付記する。

#### 記

(付記項1) 内視鏡の鉗子チャンネルに挿通可能なシース部と、前記シース部の先端に設けられた開閉自在の一対の鉗子と、前記鉗子に固着され、前記シース部の手元側まで延出された操作手段と、前記シース部の手元側に固着され、前記操作手段を接続した操作部と、前記操作部に固着された送水用口金と、を具備した内視鏡用処置具において、前記送水用口金から注入される液体の散布手段を設けたことを特徴とする内視鏡用処置具。

【0063】(付記項1の従来技術) 従来、生体組織を採取するには内視鏡にて病変部を観察した後、内視鏡

のチャンネルに生検鉗子を挿入して病変の一部を採取することが行われているが、病変と正常な部位との区別がつきにくい場合が往々にしてある。その場合、生検鉗子を挿入する前に色素散布チューブを内視鏡の鉗子チャンネルに挿入し、色素を粘膜の広範囲に散布して着色する。これにより病変と正常の部位の境界が明らかとなる。次に色素散布チューブを鉗子チャンネルから抜き取り、生検鉗子により病変部を採取する。しかしながら色素散布チューブ、生検鉗子の挿抜操作が煩雑であり、手間が掛かるという欠点があった。そこで生検鉗子の内部を通して色素を粘膜に散布できるようにした生検鉗子の構造が、特開平4-146741号公報において開示されている。

【0064】(付記項1が解決しようとする課題) しかししながら、特開平4-146741号公報に開示されている構造では、色素の出口部から色素が直線的に放出されるため、粘膜の広範囲を一度に着色することは困難である。従って粘膜の広範囲に色素を散布するためにには、内視鏡または鉗子を上下左右に振る等の操作が必要になり、操作が煩雑となる。また色素の使用量が多くなるという問題点があった。

【0065】(付記項1の目的) 本考案は前記の問題に鑑みてなされたもので、簡単な操作で色素を粘膜の広範囲に散布することが可能な内視鏡用処置具を提供することを目的とする。

【0066】(付記項1の課題を解決するための手段および作用) 本考案は内視鏡用処置具において、内視鏡の鉗子チャンネルに挿通可能なシース部と、前記シース部の先端に設けられた開閉自在の一対の鉗子と、前記鉗子に固着され、前記シース部の手元側まで延出された操作手段と、前記シース部の手元側に固着され、前記操作手段を接続した操作部と、前記操作部に送水用口金と、を具備した内視鏡用処置具において、前記送水用口金から注入される液体の散布手段を設けたことを特徴とする。内視鏡用処置具を内視鏡の鉗子チャンネルに挿入し、送水用口金に注射筒を取付け、色素液を注入する。散布手段により色素液は粘膜の広範囲に広がり、病変の存在と境界が明らかになる。続いて鉗子を開いて病変に当接させ、そのまま鉗子を閉じて組織を採取する。内視鏡用処置具を鉗子チャンネルから抜去して、採取組織を回収する。

【0067】(付記項1の発明の効果) 色素液が霧状となって噴出され、注射筒の単純な送液操作によって粘膜の広範囲に色素を散布する事が可能となる。よって色素を広範囲に散布するために鉗子を上下左右に振る等の煩雑な操作がなく、また色素の使用量を少なくすることができる。

【0068】(付記項2) 前記散布手段が前記鉗子に近接して設けられていることを特徴とする付記項1に記載の内視鏡用処置具。

(付記項3) 前記散布手段が螺旋状の旋回溝により構成されていることを特徴とする付記項1～2に記載の内視鏡用処置具。

【0069】(付記項4) 前記鉗子が外方向に付勢されたアームを具備する弾性体で形成されていることを特徴とする付記項1～3に記載の内視鏡用処置具。

(付記項5) 前記シース部の外表面が被覆され、シース部内部に前記螺旋状の旋回溝が配置されていることを特徴とする付記項1～4に記載の内視鏡用処置具。

【0070】(付記項6) 手元側に前記送水用口金を接続した送水管路を前記シース部の内腔に挿通したことを特徴とする付記項1～4に記載の内視鏡用処置具。

(付記項7) 前記送水管路が前記シース部の外側に並設されていることを特徴とする付記項1～4に記載の内視鏡用処置具。

【0071】(付記項8) 前記螺旋状の旋回溝が前記鉗子の外表面に設けられていることを特徴とする付記項1～3に記載の内視鏡用処置具。

(付記項9) 前記散布手段が前記鉗子に近接して設けられた2つの開口部と、それぞれの前記開口部に接続された送気手段及び送水手段によって構成されることを特徴とする付記項1～2に記載の内視鏡用処置具。

(付記項10) 前記散布手段が前記鉗子表面に設けられた複数の孔によって構成されることを特徴とする付記項1～2に記載の内視鏡用処置具。

【0072】  
【発明の効果】本発明によれば送水路の出口から外部に流出される液体を広い範囲に亘り散布する散布手段を設けたので、簡単な操作で色素を生体組織の粘膜の広範囲に散布することができ、色素の使用量を少なくすることができる。

#### 【図面の簡単な説明】

【図1】 本発明の第1の実施の形態を示すもので、(A)は内視鏡用処置具全体の側面図、(B)は内視鏡用処置具の先端部の要部構成を示す縦断面図、(C)は鉗子要素が生体組織を切除した状態を示す縦断面図。

【図2】 本発明の第2の実施の形態の内視鏡用処置具の先端部の要部構成を示す縦断面図。

【図3】 第2の実施の形態の内視鏡用処置具の送水チューブを手元側に移動させた状態を示す縦断面図。

【図4】 第2の実施の形態の内視鏡用処置具のシース部内の収納空間に切除組織を収納させた状態を示す縦断面図。

【図5】 本発明の第3の実施の形態を示すもので、(A)は内視鏡用処置具の先端部の要部構成を示す斜視図、(B)は内視鏡用処置具の先端部の要部構成を示す縦断面図。

【図6】 本発明の第4の実施の形態を示すもので、(A)は内視鏡用処置具の先端部の要部構成を示す斜視図、(B)は内視鏡用処置具の先端部の要部構成を示す

### 断面図。

【図7】 本発明の第5の実施の形態を示すもので、  
(A)は内視鏡用処置具のカップを閉状態でシース部内  
に収納させた状態を示す縦断面図、(B)は内視鏡用処  
置具のカップをシース部に露出させて開いた状態を示す  
縦断面図。

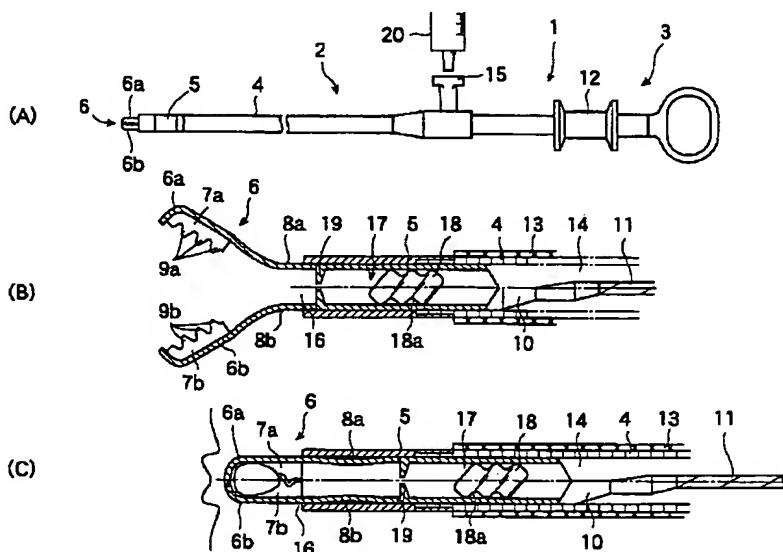
【図8】 本発明の第6の実施の形態を示すもので、  
(A)は内視鏡用処置具のカップを閉状態でシース部内  
に収納させた状態を示す縦断面図、(B)は内視鏡用処  
置具のカップをシース部に露出させて開いた状態を示す 10

### 縦断面図。

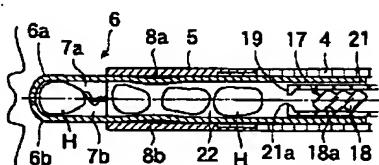
### 【符号の説明】

- 4 シース部  
 3 操作部  
 6 先端処置部  
 6 a, 6 b 鋼子要素  
 1 2 スライダ（操作手段）  
 1 5 送水コック（送水用口金）  
 1 4 送水路  
 1 7 散布手段

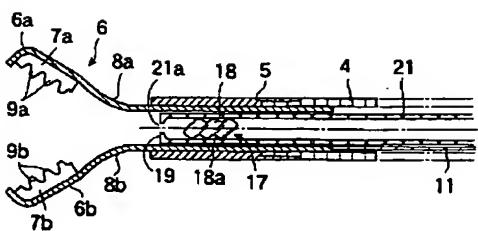
### 【図1】



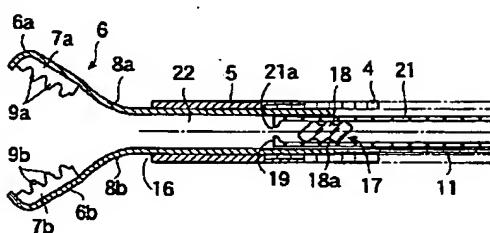
[図 4]



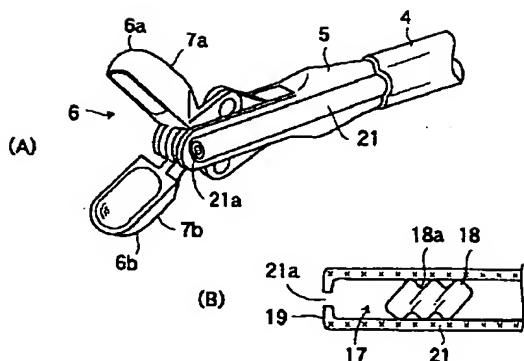
[图2]



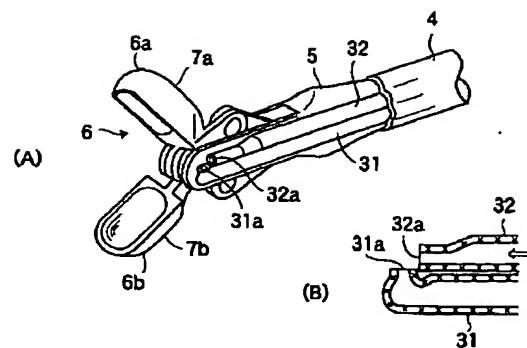
[図3]



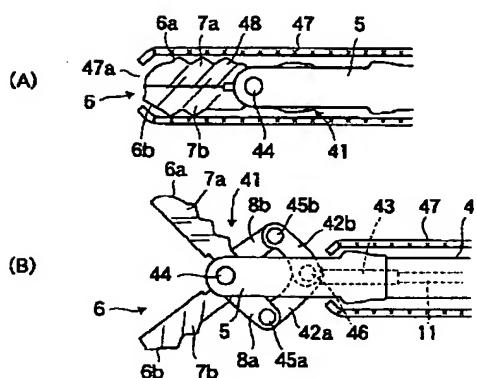
【図5】



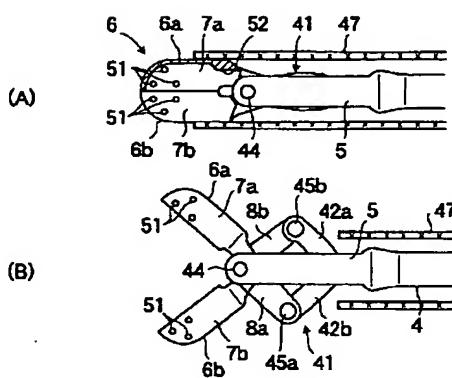
【図6】



【図7】



【図8】



フロントページの続き

(72) 発明者 川島 晃一

東京都渋谷区幡ヶ谷2丁目43番2号 オリ  
ンバス光学工業株式会社内

(72) 発明者 石川 正宏

東京都渋谷区幡ヶ谷2丁目43番2号 オリ  
ンバス光学工業株式会社内

(72) 発明者 木村 耕

東京都渋谷区幡ヶ谷2丁目43番2号 オリ  
ンバス光学工業株式会社内